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EXAMINER

BULLOCK JR, LEWIS ALEXANDER

ART UNIT

PAPER NUMBER

2195

DATE MAILED: 10/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/553,971

Applicant(s)

ALLAVARPU ET AL.

Examiner

Lewis A. Bullock, Jr.

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 12-16, 20-28 and 32-38 is/are rejected.
- 7) ☒ Claim(s) 10, 11, 17-19 and 29-31 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-3, 6, 7, 12, 13, 15, 16, 25-28, 37 and 38 are rejected under 35 U.S.C. 102(e) as being anticipated by KRISHNAMURTHY (U.S. Patent 6,421,676).

As to claim 15, KRISHNAMURTHY teaches a thread-safe method (col. 6, lines 63-65) for using a management interface for management of a plurality of managed objects on a network (col. 2, line 58 – col. 3, line 45), the method comprising: receiving a plurality of management requests from a multi-threaded manager application (collector) into a secondary scheduler (input scheduler) in a thread-safe manner (via storing request from collector in input queue) (col. 6, lines 20-29; col. 8, lines 1-6); scheduling the plurality of management requests in a secondary queue (input queue) in the secondary scheduler after receiving the management requests from the manager application (col. 6, lines 20-29; col. 8, lines 1-6); sending the management requests from the secondary scheduler to a primary scheduler (output scheduler) in a thread-safe

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manner ( col. 8, line 60 – col. 9, line 47); scheduling the management requests in a primary queue (output queue) in the primary scheduler (col. 8, line 60 – col. 9, line 47), executing the management requests on the managed objects (sources) after scheduling the management requests in the primary queue (col. 3, lines 8-14).

As to claim 16, KRISHNMURTHY teaches sending the management requests to a management information server coupled to the managed objects (routing manager) (col. 3, lines 30-35).

As to claim 25, KRISHNMURTHY teaches the primary scheduler is executed in a single thread associated with the management interface, and wherein the secondary scheduler is executed in at least one different thread (col. 10, lines 5-8; col. 10, lines 57-67).

As to claim 26, KRISHNMURTHY teaches the secondary scheduler is multithreaded (col. 10, lines 5-8; col. 10, lines 57-67).

As to claims 27, 28, 37 and 38, reference is made to a computer readable medium that corresponds to the method of claims 15, 16, 25 and 26 and is therefore met by the rejection of claims 15, 16, 25 and 26 above.

As to claims 1-3, 6, 7, 12 and 13, reference is made to a system that corresponds to the method of claims 15, 16, 25 and 26 and is therefore met by the rejection of claims 15, 16, 25 and 26 above.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 4, 5, 8, 9, 20-24 and 32-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over KRISHNAMURTHY (U.S. Patent 6,421,676).

As to claims 20-22, KRISHNMURTHY teaches a management interface for managing a plurality of managed objects (sources) (col. 3, lines 1-30). However, KRISHNMURTHY does not explicitly detail that the interface is a Portable Management Interface that corresponds to telephone network / devices. Official Notice is taken in that such environments are well known in the art and would be obvious that the invention of KRISHNMURTHY functions with this well known environment since the invention is well-suited for data collection from mobile endpoints (col 11, lines 66-67) and in any network (col.12, lines 28-31). In addition, the management interface of parent claim 15 has no patentable weight since the limitation is an intended use of the

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claims. Therefore, the well known PMI that for instance is outlined in the APA as an exemplary network environment, works in conjunction with the teachings of Krishnmurthy.

As to claims 23 and 24, KRISHNMURTHY teaches the receiving and sending of requests / responses (col. 9, lines 10-48). However, KRISHNMURTHY does not teach a lock. Official Notice is taken in that it is well known in the art that when communicating between process / programs, one can use a lock, i.e. semaphore, to synchronize the transfer of messages or grant the transfer of messages to/from the recipient/sender. Therefore, the combination of Krishnmurthy sending of management requests / responses data messages between schedulers would do so through the well known technique of locks, in order to synchronize transmission between processes / programs. See Unix Network Programming by Stevens for example.

As to claims 32-36, reference is made to a computer readable medium that corresponds to the method of claims 20-24 and is therefore met by the rejection of claims 20-24 above.

As to claims 4, 5, 8 and 9, reference is made to a system that corresponds to the method of claims 21-24 and is therefore met by the rejection of claims 21-24 above.

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As to claim 14, KRISHNMURTHY teaches communication between the primary scheduler and the secondary scheduler for sending requests / responses. However, KRISHNMURTHY does not teach a communication pipe for waking one of the schedulers. Official Notice is taken in that when sending messages between programs a pipe is used thereby waking up processes / programs. Therefore, the combination of Krishnamurthy sending of management requests / responses data messages between schedulers would do so through the well known technique of pipes, in order to synchronize transmission between processes / programs. See Unix Network Programming by Stevens for example

#### ***Allowable Subject Matter***

5. Claims 10, 11, 17-19, and 29-31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

6. Applicant's arguments filed July 12, 2006 have been fully considered but they are not persuasive.

Applicant argued that Krishnamurthy fails to anticipate receiving a plurality of management request from a multi-threaded manager application into a secondary scheduler in a thread-safe manner. Applicant supports this assertion by stating that Krishnamurthy's input queue does not receive management request from a higher

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collector as the Examiner contends but instead the input queue stores request for collection from downstream nodes, such as endpoints or lower level collectors and not from higher level collectors. In response, the examiner states that the teachings of Krishnamurthy teaches one collector propagating a request through its input scheduler using its input queue to an output queue wherein the output scheduler sends the request or executes the request by sending the request to another collector.

Regardless of whether the other collector is higher or lower, the initiating collector is the managing application and the receiving collector is the entity that executes the management task. In addition, Krishnamurthy teaches that the collectors are multi-threaded by having schedulers which are multi-threaded implementations (col. 8, lines 1-15; col. 5, line 64 – col. 6, line 20) as well as single threaded, because the schedulers are threads that can spawn other threads. If a thread is not spawned, the schedulers are single-threaded. Therefore, Krishnamurthy teaches a secondary scheduler executable to receive a plurality of requests from a multi-threaded application in a thread-safe manner and send the requests received from the multi-threaded application to the primary scheduler in two ways. First, wherein the collector receives the users request and sends the request to its input scheduler that sends the request to an output scheduler to be handled by another collector or secondly, by an initial collector and its schedulers sending the request via its schedulers to a mid-level collector wherein its input scheduler and output scheduler are the claimed schedulers that handles the request received from the initial collector to be sent and handled by another collector. Therefore, Krishnamurthy adequately teaches the claims as disclosed.



Applicant then argues that Krishnamurthys endpoints or lower level collectors cannot be considered the multi-threaded manager application by arguing that endpoints are systems. Applicant has not addressed how collectors are not manager applications and therefore the rejection is maintained.

Applicant states that Krishnamurthy's data collection messages are not management requests and that the CTOCs are not executed. The examiner disagrees. Krishnamurthy states that upon receiving CTOC, the collector will queue the CTOC for handling such that the collection data is stored in persistent storage (col. 5, lines 22-31). Once collector has stored the collection data, collector sends a message containing the CTOC to either another collector or the recipient (col. 5, lines 23-48). Collectors also perform route calculations and marshaling in order to transfer the data between collectors (col. 6, lines 7-20). Finally collector includes a customization and control module to support status monitoring and the ability to stop any particular collector and drain its queues (col. 8, lines 49-59; col. 9, lines 10-25). Since the CTOCs detail the data to be transferred and when, as well as, whether to stop and drain a collector, they would be considered management request. Secondly, since the claims provide no indication of what is meant by executing a schedule request, Krishnamurthy's teaching of transferring, stop, or marshalling the data would suffice as executing a schedule request.

Applicant reminds the examiner that anticipation requires the presence of each and every limitation of the claimed invention such that the identical invention must be shown in as complete detail as is contained in the claims. The examiner responds by

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stating that the teachings of Krishnamurthy meet the claim limitations as disclosed such that the teachings of Krishnamurthy meet the broad language of the claims.

Regarding Applicants argument that the callback functions are not well known in the art. The examiner responds accordingly. The examiner disagrees that callback functions are not well known in the art in relation to managed systems. However, the examiner does agree with Applicants statement that the it may not be obvious to one of ordinary skill in the art to embed these callbacks in scheduled management requests. The cited prior art of documents submitted with the action detail that such callbacks are typically registered within a managed system to be notified of changes or results to a managing system. Krishnmurthy does teach that the input scheduler receives results from the output scheduler as to whether the task is sent. However, this results is not based on a callback sent along with the request to the output scheduler. In addition, since the callbacks are generally registered separately, this would not be obvious. Therefore, those claims now have allowable subject matter.

Regarding Applicants arguments that a Portable Management Interface are not well known in the art (claim 20 and 21). The examiner disagrees. Applicant's admitted prior art, clearly indicates that Portable Management Interface may be used for communication between client manager applications and a Management Information Server are examples of a network management system. The claims only mention the management interface in the preamble as an intended use. There are no steps or indications of the executing of the management request as outlined in the claim steps being performed by the management interface. Even the claim limitation in dispute the

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claim language details the intended use of the functions, "which are operable to execute the management requests". Therefore, the examiner responds by stating that the interface has no patentable weight and would be obvious teaching to the management environment of Krishnamurthy, even though Krishnamurthy would not invoke the interface. Should Applicant amend the claims such that the executing the management requests on the managed objects **using the management interface** after scheduling the management requests in the primary queue", patentable weight can be given to the management interface.

Applicant argues that Krishnamurthy does not teach that this system is well-suited for data collection "in any network" as asserted. The examiner disagrees. Krishnamurthy places no limits on how the system as defined and claimed is interpreted. Krishnamurthy states the system is either homogenous or heterogenous, and may form a variety of different types of network (col. 2, lines 58 – col. 3, line 7). Krishnamurthy allows for various changes in form and detail to be made (col. 12, lines 27-31). As outlined above, since the management interface is an intended use and is never utilized, the addition of a management interface to the system of Krishnamurthy without invoking it, as done by Applicant, would allow such a change or alteration. Therefore, the rejection is maintained.

Applicant argues that the rejection of claims 23-24 and 35-36 fails because it fails to teach or suggest receiving or dispatching a plurality of management requests through a thread safe lock. Applicant further states that although the use of locks for communication is well known, the references either singly or in combination teach

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receiving a plurality of management requests from an application into a secondary scheduler. The examiner disagrees. As stated in the arguments above, Krishnamurthy teaches sending of management requests from a management application to a secondary scheduler via one of the two ways detailed above. Stevens teaches that when two processes / programs communicate they do so through a lock. Therefore, the combination would teach that when the management application (process / program) communicates with the secondary scheduler (process / program) it would do so through a lock. Therefore, the combination of references teaches the limitation of the claims. This same reasoning is used in showing that the combination teaches a secondary scheduler (process / program) using a communication pipe to communicate and wake up a primary scheduler (process / program) in relation to claim 14.

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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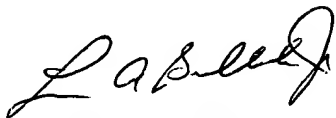
the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lewis A. Bullock, Jr. whose telephone number is (571) 272-3759. The examiner can normally be reached on Monday-Friday, 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng An can be reached on (571) 272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

September 26, 2006

  
LEWIS A. BULLOCK, JR.  
PRIMARY EXAMINER